agricultural economics

Agricultural economics is the field of social science concerned with economic solutions to the problems of agriculture, to the wise use and conservation of natural resources, and to the growth and development of a food industry that responds effectively to changes in consumer demand. An applied academic field, it uses the principles of economics to analyze and suggest efficient allocation decisions for the use of land, labor, capital, and management given the constraints of institutions, technology, and markets.

The Work of Agricultural Economics

The field of agricultural economics encompasses a number of different specializations, including the study of the agricultural inputs of land, labor, and finance; the economics involved in environmental pollution and regulation; policies relating to agriculture; international trade in agricultural products; and agricultural development in the third world.

Consumers have spent an increasingly smaller proportion of their disposable income on food and related products in the second half of the 20th century. This percentage has decreased to an average of 14% in the United States in the 1990s, one of the lowest such rates in the world. Farm numbers have decreased from over 6 million in the 1930s to 2 million in the 1990s as the industrialization of agriculture and the food industry has progressed. The 300,000 largest farms produce 80% of the total value of farm output in the 1990s. Further concentration of production and distribution in all sectors of the food industry seems likely.

Government and Agriculture

Government has intervened in agricultural production in nearly all countries of the world during the 20th century. Aggregate demand for food is inelastic: the capacity of the human stomach is only so large regardless of how low prices fall. When new technology and scientific agriculture is adopted, supply often increases more rapidly than effective demand. Prices fall or rise more than proportionately with small changes in supply. For storable commodities like wheat, corn, rice, and cotton, large stocks can accumulate and keep farm prices at very low levels. It was out of these conditions in the 1920s and 1930s that government intervention had its beginnings. In North America and Western Europe crop stocks accumulated, farm prices fell, and the Great Depression left many people hungry and out of work. World War II and the population explosion in the developing countries led to increased intervention in markets to affect both supply and demand conditions, especially for the basic food and feed grains.

The goal of agricultural programs is to ensure for society an adequate supply of safe, high-quality, low-cost food and fiber, to conserve our scarce natural resources, and to encourage farms and firms in the industry to compete internationally. Important complementary goals are to reduce hunger, both here and abroad, and to improve human nutrition and health. Over the years in the United States the New Deal programs of the 1930s have evolved into the comprehensive agricultural legislation of the 1990s. Major revisions have been made by Congress every four or five years since 1973. It is a bipartisan process with both political parties committed to reducing government outlays for agricultural programs and allowing the market to have an increased role in determining prices.

The Food, Agriculture, Conservation, and Trade Act of 1990 is in effect until December 1995. This omnibus bill has 25 titles of which the first 11 deal with commodity programs. There is a separate title for each of the storables, such as wheat, feed grains, cotton, and peanuts. A complex system of target prices and support levels has been established for producers who agree to limit production to a certain proportion of the cropland used historically for these commodities and who agree to follow a set of approved conservation practices in production. The payment limit on each of these programs is established at $50,000 annually. Another major title covers revisions in the Food Stamp and other domestic food distribution programs like School Lunch and the Women's, Infants', and Children's Program (WIC), where more than 50% of all budget allocations to the U.S. Department of Agriculture (USDA) are expended. Other major titles include conservation, trade and export programs, marketing, forestry, credit, promotion, rural development, crop insurance, and global climate change, among others. Over the years special programs have been established, such as the Farmers Home Administration, which provides low-cost credit to beginning farmers, and the Conservation Reserve, in which highly erodible cropland is rented to the government in long-term contracts. Necessary changes in basic legislation are accomplished through these titles. No major changes are likely until 1995 when the next omnibus bill is considered.

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systems that minimize long-term effects on soil, air, and water resources, as well as human health. Analyses of the tradeoffs from using different practices and technologies and studying their costs and benefits are major thrusts of current research on sustainable systems around the world.

Trade and the Globalization of Agriculture

Because food and fiber are such basic necessities, most countries in the years following World War II established legislation and policies to protect and support domestic agriculture. The Common Agricultural Policy (CAP) of the European Community (EC) is one of the basic building blocks holding the European Common Market together. Even such major agricultural exporters as Canada and the United States have protectionist programs for eggs and dairy (Canada) and sugar and peanuts (U.S.). Over time these protectionist measures, which encourage domestic production, have distorted world trade in agricultural products. Between 1970 and 1985, Western Europe has changed from being an importer of food and feed grains to a major exporter. Because protected internal prices in the EC exceed world prices by a large margin, export dumping has been practiced, and the U.S. has responded by subsidizing exports to the same markets in competition.

Trade in all products has increased dramatically in the second half of this century, in large measure because of the GENERAL AGREEMENT ON TARIFFS AND TRADE (GATT). Major reductions in barriers to trade have been negotiated over the past 50 years in most industries except agriculture. The Uruguay Round (late 1980s and early 1990s) has put substantial emphasis on reducing barriers to trade in agricultural products. Progress has been slow. Exporting nations demand a gradual reduction in government protection of domestic producers, while farm groups in the EC and Japan resist these demands. If the GATT negotiations are unsuccessful, increased emphasis will be placed on regional free-trade agreements like the North American Free Trade Agreement (NAFTA) between Canada, Mexico, and the United States. Agriculture is an important component of these proposals, which seek to eliminate most barriers to trade over a span of 15 years.

Agricultural Economics and the Developing Countries

Out of the post-World War II MARSHALL PLAN and distributions made from the agricultural surpluses of the 1950s has emerged a series of programs of technical assistance and food aid addressed to the developing countries of Asia, Africa, and Latin America. These programs have helped to increase domestic capacity for both agricultural production and distribution at many locations around the world. While food aid can be a constructive force for development, it can also foster dependency and lower incentives for local food production if overseas supplies of food grains are allowed to disrupt local markets. Technical assistance to improve irrigation systems, develop new, pest-resistant varieties of seeds, support local programs of agricultural education, and improve all-weather roads and communication systems have had positive effects. Food aid, used to pay workers who build new dams, roads, and rural infrastructure, has been an effective instrument of development. On the other hand, the dumping of surplus food grains from rich countries into the urban markets of poor countries has been shown to slow the development process.

One of the great development successes of the second half of the 20th century has been the creation of the system of International Agricultural Research Centers supported by the international aid organizations of the rich countries of the world and by the World Bank. The first center, the International Rice Research Institute in the Philippines, was established in 1962. There are now 18 of these centers, each committed to developing new agricultural technology for a commodity or a class of agricultural problems. Agricultural economists helped to establish this system, and they work on marketing and distribution issues at each of the centers.

If standards of living are to improve in the developing countries, markets for their output must be opened in the rich countries so that they may also benefit from specialization of production and trade. If the GATT negotiations on agricultural products do not move forward, regional free trade zones like NAFTA may be the intermediate step required to allow developing economies to move further away from dependency into international competitiveness.

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See also: AGRIBUSINESS; FARMS AND FARMING; GREEN REVOLUTION.